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Preparation of sustained-release dosage form of Venlafaxine HCl using liquisolid technique

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Abstract: Abstract Context: The aim of this study is to control the dissolution rate of Venlafaxine HCl. Objective: To prepare sustained release tablets of Venlafaxine HCl. Material and methods: Different liquisolid formulations, liquid vehicles, drug concentration in the liquid medication and different ratios of carrier to coating material (R) were prepared. The prepared powders were characterized for possible interactions between drug and excipients using differential scanning calorimetry, X-ray, Fourier transform infrared analysis and scanning electron microscopy. Powder flowability was also evaluated, then they are compressed at different compression forces, and the compressed tablets were evaluated for their mechanical properties and dissolution profile. Results: Release results show that sustained release behavior can be obtained from liquisolid formulation containing Tween 80 as liquid vehicle. Discussion: Many factors affect the retardation effect of Venlafaxine HCl such as the type of liquid vehicle, drug concentration in the liquid medication and R. The mechanism of the in vitro release profiles was found to be mainly controlled by diffusion and polymer relaxation. Conclusion: Sustained release formulation of Venlafaxine HCl was attained using the liquisolid technique.